

ABSTRACT OF THE DISCLOSURE

1 A receiver that receives a long pseudonoise (PN) code signal composed of two
2 shorter codes interleaved with one another, includes a correlator unit that correlates the
3 received signal with one or more reference codes corresponding to the two interleaved
4 codes, respectively, and generates correlation signals. The receiver also includes an even
5 code detector coupled to the correlator unit, for detecting from the correlation signals one
6 of the two shorter codes, and an odd code detector coupled to the correlator unit, for
7 detecting from the correlation signals the short code that is not detected by the even
8 detector. A delay unit is coupled to the even and odd code detectors, and delays the even
9 or the odd correlation signals so as to align the correlation signals. The aligned signals
10 are combined and evaluated by a merit function. If the combined signals exceed a
11 threshold value the short codes are determined to be aligned, the phase of each code can
12 be determined, and the phase of the longer code can be determined from the determined
13 phases of the shorter codes. The receiver can detect two short PN codes that have been
14 combined, such as by interleaving the short codes, to create a long PN code. Hence, the
15 receiver can inexpensively detect the two short codes which allows the receiver to detect
16 the long code with high gain.